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THE PLANT DISEASE REPORTER

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BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING
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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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WOUND DRESSING FOR LONDON PLANE TREES

James M. Walter

Canker-stain of London plane is caused by a species of Endoconidiophora very closely related to Endoconidiophora fimbriata, the cause of black rot of sweet potato.

The planetree fungus will survive for several days in the commonly used brands of asphalt tree wound paints if they become contaminated with infected sawdust, bits of bark and wood, or spores of the fungus. Contamination commonly takes place from sawdust clinging to the brush after use in painting pruning cuts through diseased wood or from sawdust falling into the can while the cut is being made. The disease is spread rapidly from tree to tree by use of contaminated dressings.

This common means of spread of the disease can be avoided by the addition of 0.2% phenyl mercury nitrate to wound dressings of the gilsonite varnish type of the class of Federal Specifications TT-V-51. No infections resulted from inoculations made with contaminated paint containing this strength of phenyl mercury nitrate while similar inoculations with paint to which no disinfective chemical was added resulted in from 90 to 100% infection. Use of this paint did not disinfect pruning cuts made with contaminated saws.

It is not recommended that phenyl mercury nitrate be used in paints based on petroleum-residue asphalt of the roof-coating class or those carrying pine oils and tars because results indicate that these combinations may be too injurious to the cambium of the London planetree.

The chemical must be thoroughly mixed with the paint. As an aid in mixing, the finely powdered chemical may be mulled in a small amount of linseed oil.

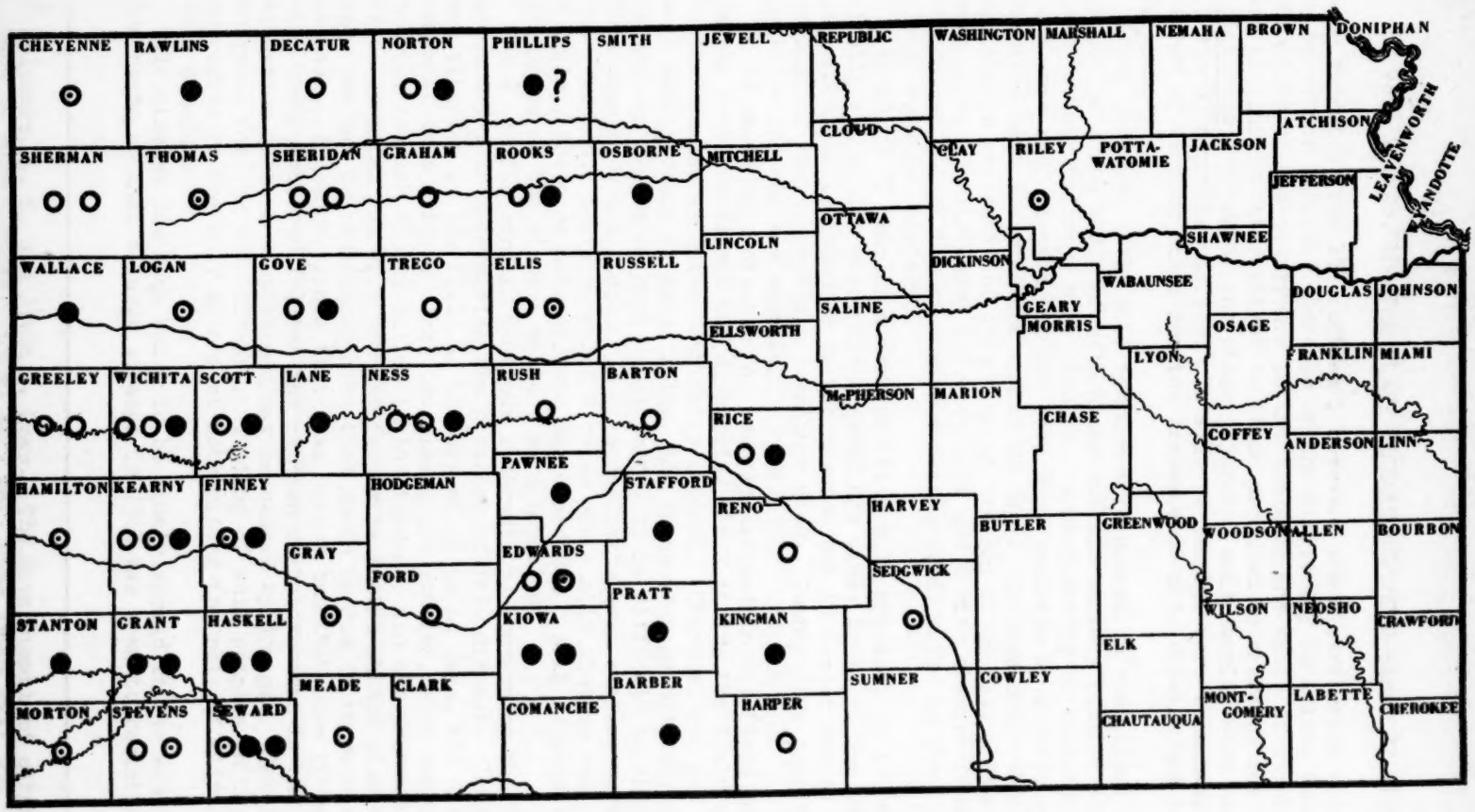
Phenyl mercury nitrate is a highly poisonous chemical and must be handled with caution. Individuals differ in sensitivity to mercurials. To be on the safe side anyone using paint fortified with phenyl mercury nitrate is advised to wipe away at once all spots that contact the skin.

DIVISION OF FOREST PATHOLOGY, BUREAU OF PLANT INDUSTRY, SOILS AND AGRICULTURAL ENGINEERING, AGRICULTURAL RESEARCH ADMINISTRATION, UNITED STATES DEPARTMENT OF AGRICULTURE, MORRISTOWN, NEW JERSEY.

THE DISTRIBUTION OF MILO DISEASE IN CENTRAL AND WESTERN KANSAS AS DETERMINED BY SOIL SAMPLES

Stuart M. Pady

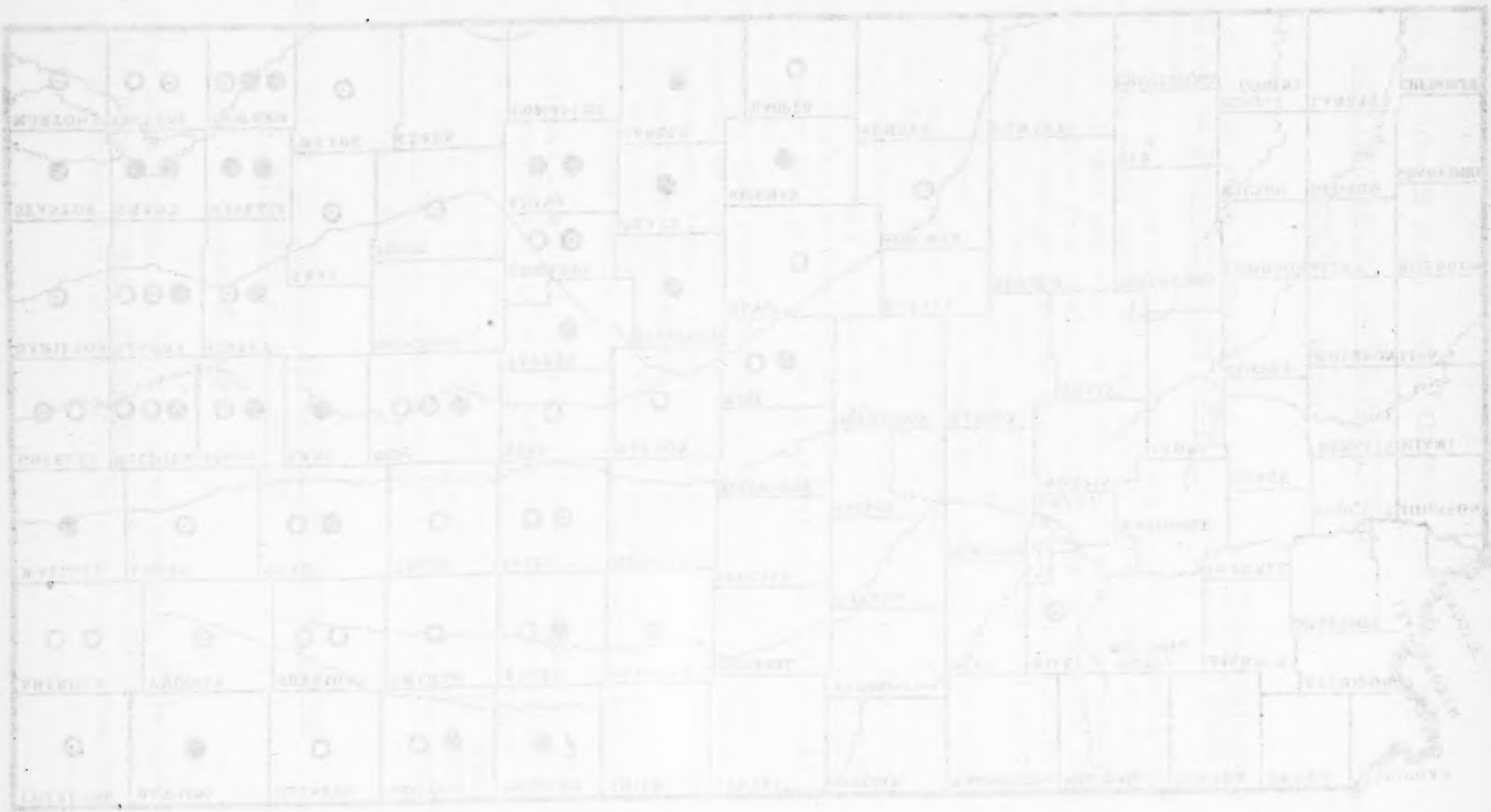
Between September 20 and October 1, 1943, a survey was made of the distribution of milo disease [Pythium arrhenomanes and other factors] of sorghums in central and western Kansas. Prior to 1943 this disease had



⊙ MILO DISEASE UP TO 1943

● SOIL SAMPLE - POSITIVE

○ " " - NEGATIVE



been reported from 17 counties[1]; however, its distribution was suspected to be rather general. Because of the difficulty in making accurate determinations of its occurrence in the field on the basis of symptoms which are similar in later stages to those produced by charcoal rot [Sclerotium bataticola], drought, and other injuries, soil samples were taken in each of the 37 counties visited. In all, 52 samples were obtained. The method of testing soils for the presence of milo disease has been described.[1]

About December 1 the soil samples were placed in sterilized 6 inch bulb flower pots and seeds of both a susceptible variety (Colby) and a resistant variety (Finney) were planted. Approximately 50 seeds of each variety were sown in each pot and were kept separate by a horizontal divider. Readings were taken at the end of 28 days. In some soils there were unmistakable evidences of infection at the end of 21 days. Nineteen checks were made; 13 with known infested soil and 6 with disease-free soil. In the former all of the susceptible plants died, while in the latter all plants remained healthy.

A total of 27 samples showed positive milo disease; in 17, all or practically all of the susceptible seedlings died; in 10 of the samples there was unmistakable evidence of the disease but in lesser amount and only a portion of the susceptible seedlings died. Twenty-five samples were negative and one was doubtful.

In 12 cases milo disease had been recognized in the field and the soil sample tests confirmed the diagnosis. In 7 fields the field notes recorded the disease as being doubtfully present. Charcoal rot and milo disease were both present in many fields, and since they produce similar symptoms at certain stages of host development, it is difficult to distinguish them except by soil test. In 24 such fields soil samples were taken and the greenhouse tests revealed 8 cases where milo disease was present. In 6 fields, where no milo disease was observed, 3 soil samples showed slight evidences of the disease while 3 were negative.

These results confirm previous observations concerning the difficulty encountered in determining the presence of this disease. Where the plants are attacked in the field at the age of 35 to 40 days, the disease is somewhat more evident since the plants are smaller, with orange-colored leaves, reddish discoloration in the tissues, and are prematurely killed. Since charcoal rot does not (so far as is known) attack plants of this age, one may be reasonably sure that death is due in these cases to milo disease. In older plants that have headed but that show premature dying with orange-colored foliage and reddish discolorations in the crown, the situation is more complex and may be caused by drought, alkali spots, charcoal rot, or milo disease. Testing of soil samples in the greenhouse appears to be the only method of determining the role of milo disease in this complex.

Milo disease has been known to be widely spread in the western part of the State so that a large acreage in 1943 was sown to resistant varieties

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[1] Melchers, L. E. and Alvin E. Lowe. The development of sorghums resistant to milo disease. Kans. Agr. Exp. Sta. Tech. Bul. 55. 1943.

such as Westland and Early Kalo. Soil samples were taken from 5 such fields even though symptoms of the disease were not present. Plantings made in the greenhouse in each soil sample showed that the soil was infested with the causal organism. Susceptible varieties, should they be sown there in subsequent years, would be attacked. These soil tests have confirmed the presence of the causal organism in 18 additional counties in Kansas, namely, Rawlins, Norton, Osborne, Rooks, Wallace, Gove, Ness, Lane, Wichita, Pawnee, Stafford, Rice, Kingman, Pratt, Barber, Kiowa, Grant, and Stanton. It is doubtfully present in Phillips County. Previously, it had been reported in 15 counties in the western half of the State. Milo disease is now present in 33 counties, indicating a rather general distribution over western Kansas. In addition the disease has been reported from 2 eastern counties, Sedgwick and Riley, thus making a total of 35 counties.

There is every reason to believe that if more than one or two soil samples were tested in a county, the presence of milo disease would be found in that county. This implies very wide distribution, particularly in that area of the State where milo and milo hybrids are generally grown.

EMERGENCY PLANT DISEASE PREVENTION PROJECT.

SWEET POTATO STORAGE DISEASES IN GEORGIA

Julian H. Miller and George Thompson

During February and March of this year sweetpotato-disease control demonstration schools were conducted in 6 widely scattered Georgia counties. As a part of each program a survey of diseases in both storage house and hills was made. Dr. G. M. Stone took part in the one in Dodge County and has reported it (PDR, Mar. 15, p. 237), and this paper presents a summary of the survey in all 6 counties.

Incidence of diseases on sweetpotatoes in storage in Georgia counties, 1943.

Black Rot			Mottle Necrosis		
No. of farmers	% of farmers	% of roots infected	No. of farmers	% of farmers	% of roots infected
13	26.50	100	1	2.04	100
1	2.04	90	1	2.04	90
1	2.04	80	-	--	80
6	12.24	70	2	4.08	70
4	8.16	60	-	--	60
3	6.12	50	2	4.08	50
1	2.04	40	-	--	40
3	6.12	30	1	2.04	30
4	8.16	20	1	2.04	20
10	20.40	10	2	4.08	10
3	6.12	1	2	4.08	1
49	100.		12	24.48	

Scurf			Mean Percentage of Sweetpotatoes Infected With -	
No. of farmers	% of farmers	% of roots infected		
1	2.04	100	Black rot	53.51
-	--	90	Mottle necrosis	10.47
-	--	80	Scurf	4.90
-	--	70		
-	--	60		
2	4.08	50		
-	--	40		
1	2.04	30		
-	--	20		
1	2.04	10		
-	--	1		
5	10.20			

Mean percentage of roots with any disease 58.83
Mean percentage disease-free 41.17

Black rot [Endoconidiophora (Ceratostomella) fimbriata] was observed in nearly every hill or crate in storage, and is the most serious disease in Georgia. Infections varied from entire disintegration to small late infections. In labpratory tests we even recovered the organism from bruises.

The term mottle necrosis is used to denote any internal breakdown. It was found impossible to distinguish a Pythium necrosis from that probably caused by cold exposure or over-heating in storage. Mycelium was found in some sweetpotatoes; in others it was impossible to recover any organism. Also, this disease was seen soon after digging in September and October as well as during the winter. In Carroll County this breakdown was seen only in hills in one part of the County where all of the farmers had obtained slips from the same source. In Monroe County one storage house contained a very high percentage but the sweetpotatoes were of mixed varieties; those with white flesh were 100% diseased while only a few of the colored sweetpotatoes were broken down. This grower had observed this disease for 4 years, and said it was rapidly increasing.

Scurf [Monilochaetes infuscans] is apparently not serious in Georgia.

Other storage rots such as dry rot, charcoal rot [Sclerotium batatícola], soft rot, [Rhizopus],etc. were found only in traces.

Where the losses were largest, farmers bedded, hilled, or planted in the same positions as in previous years. No attention was paid to drainage from previously planted fields. In south Georgia it was difficult to find a field free from possible infection because of the common practice of hauling out rotten sweetpotatoes and scattering them on high places in fields for hogs. In every case where some black rot spots were seen at harvest the roots were almost a total loss whether in hills or storage houses. A good correlation was found between the use of stable manure and the incidence of disease.

The loss to the retailer and ultimate consumer of stored sweetpotatoes is much greater than 58.83%. The farmer sells roots with slight black rot infections; subsequently the store-keeper is forced to discard such infected roots because of the rapid decay after handling.
UNIVERSITY OF GEORGIA

SWEETPOTATO STORAGE DISEASES IN IOWA

Edgar F. Vestal

In company with Dr. C. S. Reddy, of the Iowa Experiment Station, farms and store houses in the vicinity of Muscatine and Conesville were visited and growers interviewed regarding the percentage of loss of sweetpotatoes found this season due to soft and dry rots and other causes. At a farm near Muscatine some 2,000 bushels of roots had been stored for the winter. Although most of the seed roots had already been distributed and bedded, the culls were still standing near the store house. Examination of these indicated that soft rot (Rhizopus nigricans) and foot rot (Plenodomus destruens) were the cause of most of the loss. In general the growers seemed to think that the loss due to culling at the time of sorting has been less this season than last. One of the principal growers of Conesville stated that he had fewer culls than last year. In his warehouse the principal varieties were K 35 and K 36, the loss to which was less than 5%. However, these are estimates and there were no exact figures available.

Muscatine growers purchased 2 car loads of sweetpotatoes for seed in Virginia. The first car load arrived after a 5-day trip with the sweetpotatoes in excellent condition. The second car load, which consisted of Big Stem Jersey sweetpotatoes was 8 days on the road and arrived in poor condition. It appeared that the car had been temporarily lost and had stood on a siding some time, resulting in a lowering of the temperature below the optimum for sweetpotato storage. When seen most of the car lot had already been distributed among the growers but one basket which had not been previously opened was found to contain about 40% soft rot affected roots. If this basket could be taken as a sample of the car lot, then the farmers suffered a serious loss through the delay in shipment. The basket examined contained a certification slip indicating that the sweetpotatoes were in good condition when shipped. It is not merely the loss in money to the growers which is serious, but it is the loss of the seed potatoes in a time like this when they are not available in large quantities. If this sort of thing has occurred in other sections it may be that pathologists may be able to render a service by bringing to the attention of those in authority the necessity of urging the most rapid handling possible of perishable commodities, especially those required for seeding purposes.
EMERGENCY PLANT DISEASE PREVENTION PROJECT. Week ending April 15.

REPORTS ON DISEASES OF POTATO AND TOMATO

POTATO LATE BLIGHT IN SOUTHERN FLORIDA: A survey of potato late blight (Phytophthora infestans) in the Belle Glade muck area was made during the week ending April 15, and supplemented by a similar survey in the Sarasota muck area. Data on 745 acres were compiled in the Belle Glade District, and 520 acres in the Sarasota District, about 75% of the total devoted to this crop in the Belle Glade area, and about 25% of the Sarasota acreage.

Late blight was present in all potato fields surveyed in both the Belle Glade and Sarasota areas. About 25% of the acreage was badly diseased, with the vines completely killed down, 60% was moderately diseased, with some green top growth remaining on the vines, and 15% was lightly diseased. During the past week many moderately diseased late fields showed signs of recovery, and it is possible that with the expected higher night temperatures, late spring potatoes may not be so badly diseased as the earlier crops. -- C. M. Slagg, Emergency Plant Disease Prevention Project. April 10 - 15.

BACTERIAL RING ROT IN POTATO SEED SOURCES USED IN COLORADO: A survey of the sources of certified (blue tag) and war-approved seed and disinfectants used on the rotary cutting knife was made in the Arkansas River Valley at Rocky Ford. Potatoes are being planted on a large scale for the first year. An estimated 650 acres will be planted.

The previous week Dr. W. A. Kreutzer, Associate Pathologist and Dr. John G. McLean, Associate Horticulturist, reported to this office that potato seed was now being cut in the Arkansas River Valley and that bacterial ring-rot (Corynebacterium sepedonicum) was found in some seed lots in excessive amounts.

Automatic rotary knives designed for boiling-water disinfection are being used for fairly large scale custom cutting. These knives at the beginning of seed cutting were either disinfected inadequately because of failure to heat the water sufficiently or were not being disinfected, the process being used primarily as a labor time-saving device. Mechanical difficulties with the individual heating units below each knife were corrected so as to heat the water sufficiently to properly disinfect the knives, and the entire machine (belts, knives, and platforms) was washed down with 1:500 solution of mercuric chloride.

In examination of seed being cut, certified (blue tag) seed from a northern State was found to be carrying excessive amounts of ring-rot. The same situation was observed in war-approved seed from that area. Seed such as the above was being cut alternately with certified (blue tag) seed from other areas.

Records are being kept as to which seed source each grower planted and whether the rotary knives were properly disinfected at the time of cutting. Field inspections will be made prior to harvest to determine the amount of ring rot losses from the respective seed sources planted in the Arkansas River Valley.-- E. W. Bodine, Emergency Plant Disease Prevention Project. Week ending April 15.

CONDITION OF TOMATO PLANTS IN COLORADO: Tomato seed is being planted directly in the field on about 800 acres in the vicinity of Manzanola. This seed was selected from fruits on healthy appearing vines and extracted by the fermentation process. Further seed treatments consisted of soaking seed in a 1-2000 solution of mercuric chloride for 5 minutes. After drying, the seed was treated with yellow cuprocide. Approximately 1,200 acres will be set with plants. Tomato plants in the seed beds at Manzanola were found to be in an excellent condition. -- E. W. Bodine, Emergency Plant Disease Prevention Project. Week ending April 15.

OTHER REPORTS ON VEGETABLE DISEASES

CELERY MOSAIC IN SOUTHERN FLORIDA: During the week ending April 15 a survey of celery mosaic (virus) in the Belle Glade muck area was carried out, and supplemented by a similar survey in the Sarasota muck area. Data on a total of 2080 acres were compiled in the Belle Glade District, and 650 acres in the Sarasota District, comprising about 75% of the total land devoted to this crop in the Belle Glade area, and about 25% of the Sarasota acreage.

Celery mosaic was found to be a serious disease in both districts, with somewhat greater losses being occasioned in the Belle Glade area. Infected plants were found in all fields. Less than 5% was rated as lightly diseased, 5 to 15% as moderately diseased, and fields showing more than 15% of the plants infected were rated as badly diseased. On this basis 610 acres surveyed in the Belle Glade area were badly diseased, 720 acres were moderately diseased, and 750 acres showed light infection. A large proportion of mosaic celery plants show longitudinal stalk lesions as the plants approach maturity, and are discarded when cutting. The outlying acreage, and new production, in the Belle Glade area usually showed less mosaic than areas where celery had been produced for several years. The Pascal type celery is comparatively resistant to mosaic.

In the Sarasota area a few of the fields surveyed were moderately diseased, but in general the infection was light. Enough mosaic was present, however, to cause serious future difficulty if weed and insect carriers are not controlled. -- C. M. Slagg, Emergency Plant Disease Prevention Project. April 10 - 15.

ONION STORAGE DISEASES IN COLORADO: Survey of onions still remaining in storage in the vicinity of Rocky Ford showed the following diseases to be present: neck rot (Botrytis allii), neck rot (Fusarium sp.), and purple blotch (Macrosporium [Alternaria] porri). -- E. W. Bodine, Emergency Plant Disease Prevention Project, week ending April 15.

DISEASES OF PEAS IN CENTRAL CALIFORNIA: During the week ending April 1 a survey was made of vegetable diseases in the Salinas Valley and in the Watsonville area in Santa Cruz County. Peas were one of the principal crops observed in these areas at this time. In the vicinity of Watsonville crops were noticeably later than in the Salinas Valley.

Downy mildew (Peronospora viciae) [P. pisi] was found in several fields but was confined mainly to the lower leaves and was not doing much damage. Slight damage by Ascochyta was observed on the leaves and stems in some fields. One field of approximately 10 acres was rendered almost worthless by a combination of downy mildew, Ascochyta blight, and frost injury. -- Horace L. Barnett, Emergency Plant Disease Prevention Project.

SEPTORIA RUBI FOUND IN SOUTH CARCLINA, GEORGIA, AND LOUISIANA

Donald P. Limber

S. M. Zeller (Phytopathology 27, (10):1004, 1937) states that S. rubi has been "definitely identified as far to the southeast as North Carolina". Freeman Weiss (PDR 26(11):264) gives the range as "N. E. States to N. Car. and probably other Southern States."

In the Special Survey of the areas in the vicinity of the maritime ports made by the Bureau of Entomology and Plant Quarantine in 1943 and 1944, 5 specimens of this fungus have been found in 3 southeastern States from which no previous reports appear to have been published. Three of these collections were made in Plaquemines Parish, Louisiana; of these, one collected at Triumph is on dewberry (Rubus sp.); the other 2 are from Buras, 1 on dewberry and the other on leaves labeled Rubus sp. but which may also be dewberry. One specimen was collected at Parris Island, Beaufort County, South Carolina, on Rubus procumbens (dewberry), and the fifth was made at Savannah, Georgia, the host being given as Rubus sp.

These specimens have been examined microscopically by W. S. Fields, F. G. Heller, or the writer and identified as Septoria rubi West. Specimens of this material have been deposited in the Mycological Collections of the Bureau of Plant Industry, Soils and Agricultural Engineering. DIVISION OF FOREIGN PLANT QUARANTINES, BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE.

BRIEF NOTES ON PLANT DISEASES

CROWN GALL ON NURSERY STOCK RECEIVED IN COLORADO: According to Mr. Herbert C. Gates, State Entomologist, State Department of Agriculture at Denver, 82,000 deciduous trees have been shipped into the State as of March 15, 1944. He reports that the only disease noted to date has been crown gall (Phytomonas [Agrobacterium] tumefaciens), and this is being found only on a small number of the trees. -- E. W. Bodine, Emergency Plant Disease Prevention Project.

A CORRECTION: The symbol $ was obviously a misprint for % in 2 places noted in earlier issues: on page 131 of the February 15/March 1 number, under cabbage drop in the middle of the page; and on page 295 of the April 7 issue, under blackleg in the middle of the page.